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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/596,590	06/16/2006	Sei-ichi Onoue	UNI94.001APC	8151
20995 7590 12/31/2007 KNOBBE MARTENS OLSON & BEAR LLP 2040 MAIN STREET FOURTEENTH FLOOR IRVINE, CA 92614			EXAMINER REDDY, KARUNA P	
			ART UNIT 1796	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com  
eOAPilot@kmob.com

## Office Action Summary

Application No.

10/596,590

Applicant(s)

ONOU ET AL.

Examiner

Karuna P. Reddy

Art Unit

1796

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 23 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 9-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8 and 20-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>12/20/2007</u> .  | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. This office action is in response to the amendment filed 10/23/2007. Applicant amended claim 1 and added claims 20-21. Claims 9-19 are withdrawn from consideration as being drawn to a non-elected invention. Claims 1-21 are currently pending in the application.

### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
  1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. Claims 1 (amended), 20-21 (new) are rejected under 35 U.S.C. 103(a) as being unpatentable over Storow et al (US 3,069, 375).

Storrow et al disclose improved aqueous dispersion acrylic copolymer coating composition (column 1, lines 14-15). The polymerization process includes forming a homogeneous dispersion comprising water and a mixture of alpha ethylenically unsaturated monomers in the presence of colloidal silica present as an alkali-stabilized silica aquasol in an amount of at least 0.1% of silica based on the weight of polymerizable monomers (column 1-17). Silica aquasols are aqueous sols of alkali-stabilized colloidal silica wherein the approximate particle size of the colloidal silica is from 5 millimicrons to 150 millimicrons (column 3, lines 4-7). Alkali present in the silica aquasol in stabilizing proportions for the colloidal silica ordinarily provides a pH from about 8 to about 10 (column 3, lines 43-46). At completion of the polymerization, resulting acidic dispersion having a pH of less than 4 is neutralized to a pH of from 5.5 to 6. The filtered aqueous dispersion is then further ammoniacally neutralized up to pH 8 (column 6, lines 46-64).

Storrow et al differs slightly with respect to the pH of neutral silica sol; the process by which neutral silica sol is prepared; neutral silica sol is not colloidal silica; and neutral silica sol contains particles with different particle diameter.

However with respect to pH of neutral silica sol, the only deficiency of Storrow et al is that it discloses a pH of from about 8 to about 10, while the present claims require a pH range of 5.0 to 7.8. It is apparent, that the instantly claimed range of 5 to 7.8 and that taught by Storrow et al are so close to each other that the fact pattern is similar to the one in *In re Woodruff*, 919 F.2d 1575,

16 USPQ2d 1934 (Fed. Cir. 1990) or *Titanium Metals Corp. of America v. Banner*, 778 F.2d 775, 227 USPQ 773 (Fed. Cir. 1985) where, despite a slight difference in the ranges, the court held that such a difference did not “render the claims patentable,” or, alternatively, that “a *prima facie* case of obviousness exists where the claimed range and prior art range do not overlap, but are close enough so that one skilled in the art would have expected them to have the same properties.”

With respect to the process by which neutral silica sol is prepared, even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” See *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985) and *In re Marosi*, 710 F.2d 798, 802, 218 USPQ 289, 292 (Fed. Cir. 1983).

With respect to silica sol not being colloidal silica, it is the examiner's position that silica sol by definition is a colloidal silica.

With respect to neutral silica sol containing particles with different particle diameter, it is the examiner's position that Storrow et al teaches particle size of the colloidal silica from 5 millimicrons to 150 millimicrons i.e. it is a distribution of silica particles with different particle diameter.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Storrow et al (US 3, 069, 375) in view of Kano (US 5, 891, 948).

The discussion with respect to Storrow et al in paragraph 4 is incorporated herein by reference..

Storrow et al is silent with respect to aggregate; size of the aggregate; and its amount relative to the resin emulsion.

However, Kano teaches coating material comprising acrylic resin latex (column 7, lines 18-19) to which is added natural aggregates such as lime rock, silica sand and mica classified by the particle diameter (column 7, lines 25-28) to obtain a finish very close to a pattern of natural granite (column 4, lines 41-43). The natural or artificial multi-color aggregates have a particle diameter of 5 mm or less (column 1, lines 25-28). See table (column 10, lines 40-62) for wt% of resin and aggregates in the coating composition. Therefore, it would have been obvious to one skilled in the art at the time invention was made to add aggregates in the coating composition of Kano to the coating composition of Storrow et al to obtain a finish very close to natural granite.

6. Claims 3 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Storrow et al (US 3, 069, 375) in view of Kano (US 5, 891, 948) and Gagliardi et al (US 5, 961, 674) and Swarup et al (US 5, 506, 325).

The discussion with respect to Storrow et al in paragraph 4 is incorporated herein by reference.

Storrow et al is silent with reference to component C, D, E, their amounts in relation to solids content of the resin emulsion and hydrophobation.

However, Storrow et al contemplate addition of fillers, pigments, other adjuvants (column 8, line 28) and reads on the extender pigment, color pigment and aggregates respectively of present claims.

Gagliardi et al teach addition of filler in an amount of 40 to 70% to increase toughness and hardness of a binder used for coating and/or reduce the cost of finished article (column 1, lines 60-65).

Swarup et al teach colloidal silica which has been partially or totally surface modified through the silanization of hydroxyl groups on the silica particle, thereby rendering the surface hydrophobic. The hydrophobation of silica is well known in the art of coating compositions and provides stability by preventing aggregation<sup>1</sup>. The silica dispersed in copolymer may be added to the coating composition at any time during formulation as a rheology control additive (column 6, lines 1-16). The colored film-forming composition can be any composition useful in coating applications. The film forming composition comprises a resinous binder and a pigment to act as a colorant (column 6, lines 25-26). The colored film-forming compositions of the present invention may contain non-

<sup>1</sup> Yamada et al (JP 02-275712 A) is included as a reference to hydrophobation of silica - provide stability by preventing aggregation.

metallic color pigments. In general the pigment is incorporated into the coating composition in amounts of about 1 to 80% by weight based on weight of coating solids (column 7, 55-64).

Kano teaches coating material comprising acrylic resin latex (column 7, lines 18-19) to which is added natural aggregates such as lime rock, silica sand and mica classified by the particle diameter (column 7, lines 25-28) to obtain a finish very close to a pattern of natural granite (column 4, lines 41-43). The natural or artificial multi-color aggregates have a particle diameter of 5 mm or less (column 1, lines 25-28). See table (column 10, lines 40-62) for wt% of resin and aggregates in the coating composition. Therefore, it would have been obvious to one skilled in the art at the time invention was made to add the aggregates of Kano, pigment of Swarup and filler i.e. extender pigment of Gagliardi, in the above mentioned proportions, to the composition of Storrow et al and subject silica sol to hydrophobation to obtain a colored coating which has a finish close to natural granites, provide stability by preventing aggregation of silica particles, exhibit increased hardness and toughness.

7. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Storrow et al (US 3, 069, 375) in view of Swarup et al (US 5, 506, 325).

The discussion with respect to Storrow et al in paragraph 4 above is incorporated here by reference.



Storrow et al is silent with respect to component F in granular state and hydrophobation.

However, Swarup et al teach colloidal silica which has been partially or totally surface modified through the silanization of hydroxyl groups on the silica particle, thereby rendering the surface hydrophobic. The hydrophobation of silica is well known in the art of coating compositions and provides stability by preventing aggregation (see footnote 1). The silica dispersed in copolymer may be added to the coating composition at any time during formulation as a rheology control additive (column 6, lines 1-16). The film forming composition comprises a resinous binder. Particularly useful resinous binders are acrylic polymers (column 6, lines 25-26). If desired, the film forming composition may contain surfactants (column 8, lines 1-3). Therefore, it would have been obvious to subject silica of Storrow et al to hydrophobation to provide stability to coating composition by preventing aggregation and add resinous binder as a film forming resin that contains an additive such as surfactant to stabilize the dispersion of coating composition.

8. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Storrow et al (US 3, 069, 375) in view of Yamada (JP 02-275712 A).

The discussion with respect to Storrow et al in paragraph 4 is incorporated herein by reference.

Storrow et al is silent with respect to hydrophobation of silica sol.

However, it is fairly common in the art to subject colloidal silica to hydrophobation. For instance, Yamada teaches preparation of organophillic i.e. hydrophobic colloidal silica sol by treating silanol groups on the surface of silica particles with hexaalkyl disilazane. This is useful for coating compositions because it provides stability to silica and prevents aggregation (abstract). Therefore, it would have been obvious to one skilled in the art at the time invention was made to subject the silica sol of Storrow et al to hydrophobation to obtain a homogeneous coating as a result of minimized aggregation.

9. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Storrow et al (US 3, 069, 375) in view of Kano (US 5, 891, 948) as applied to claim 2 above, and further in view of Yamada (JP 02-275712 A).

The discussion with respect to Storrow et al in view of Kano in paragraph 5 is incorporated herein by reference.

Storrow et al in view of Kano is silent with respect to hydrophobation of silica sol.

However, it is fairly common in the art to subject colloidal silica to hydrophobation. For instance, Yamada teaches preparation of organophillic i.e. hydrophobic colloidal silica sol by treating silanol groups on the surface of silica particles with hexaalkyl disilazane. This is useful for coating compositions because it provides stability to silica and prevents aggregation (abstract). Therefore, it would have been obvious to one skilled in the art at the time

invention was made to subject the silica sol, of Storrow et al in view of Kano, to hydrophobation to obtain a homogeneous coating as a result of minimized aggregation.

10. Claim 1, 20 and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et al (US 6, 008, 291).

Weinberger et al disclose viscosity stabilized aqueous polyester dispersions comprising polyester resin and silica in an amount such that the mass of  $\text{SiO}_2$  is from 0.1 to 50% of the mass of polyester resin (abstract). The polyester resin dispersions generally have a pH of more than 7, preferably from 8 to 10 (column 2, lines 18-20). The content of silicon dioxide can be introduced by adding aqueous silica dispersions to aqueous dispersions of polyester (column 3, lines 7-9). The aqueous silica dispersion can comprise a product which is formed by hydrolysis of silicon compounds (column 4, lines 33-37). Preference is given to those aqueous silica dispersion which have a pH of from about 7.0 to about 14.0 (column 4, lines 57-60). The average particle size of the silica in dispersions is suitably from 5 to 130 nm (column 4, lines 52-54). The binders prepared using polyester dispersions viscosity-stabilized find use in compositions for coating materials (column 7, lines 60-62).

Weinberger et al is silent with respect to neutral silica sol containing two or more kinds of neutral silica sol different in average primary particle diameter.

However, Weinberger et al teach that the average particle size of silica is suitably from 5 to 130 nm. It is the examiner's position that, it is a distribution of silica particles with different particle diameter.

11. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et al (US 6, 008, 291) in view of Kano (US 5, 891, 948).

The discussion with respect to Weinberger et al in paragraph 10 is incorporated herein by reference..

Weinberger et al is silent with respect to aggregate, size of the aggregate and its amount relative to the resin emulsion.

However, Kano teaches coating material comprising acrylic resin latex (column 7, lines 18-19) to which is added natural aggregates such as lime rock, silica sand and mica classified by the particle diameter (column 7, lines 25-28) to obtain a finish very close to a pattern of natural granite (column 4, lines 41-43). The natural or artificial multi-color aggregates have a particle diameter of 5 mm or less (column 1, lines 25-28). See table (column 10, lines 40-62) for wt% of resin and aggregates in the coating composition. Therefore, it would have been obvious to one skilled in the art at the time invention was made to add aggregates in the coating composition of Kano to the coating composition of Weinberger et al to obtain a finish very close to natural granite.

12. Claims 3 and 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et al (US 6, 008, 291) in view of Kano (US 5, 891, 948), Gagliardi et al (US 5, 961, 674) and Swarup et al (US 5, 506, 325).

The discussion with respect to Weinberger et al in paragraph 10 is incorporated herein by reference.

Weinberger et al is silent with reference to component C, D, E, their amounts in relation to solids content of the resin emulsion and hydrophobation.

However, Gagliardi et al teach addition of filler in an amount of 40 to 70% to increase toughness and hardness of a binder used for coating and/or reduce the cost of finished article (column 1, lines 60-65).

In addition, Swarup et al teach colloidal silica which has been partially or totally surface modified through the silanization of hydroxyl groups on the silica particle, thereby rendering the surface hydrophobic. The hydrophobation of silica is well known in the art of coating compositions and provides stability by preventing aggregation (see footnote 1). The silica dispersed in copolymer may be added to the coating composition at any time during formulation as a rheology control additive (column 6, lines 1-16). The colored film-forming composition can be any composition useful in coating applications. The film forming composition comprises a resinous binder and a pigment to act as a colorant (column 6, lines 25-26). The colored film-forming compositions of the present invention may contain non-metallic color pigments. In general the pigment is incorporated into

the coating composition in amounts of about 1 to 80% by weight based on weight of coating solids (column 7, 55-64).

Furthermore, Kano teaches coating material comprising acrylic resin latex (column 7, lines 18-19) to which is added natural aggregates such as lime rock, silica sand and mica classified by the particle diameter (column 7, lines 25-28) to obtain a finish very close to a pattern of natural granite (column 4, lines 41-43). The natural or artificial multi-color aggregates have a particle diameter of 5 mm or less (column 1, lines 25-28). See table (column 10, lines 40-62) for wt% of resin and aggregates in the coating composition. Therefore, it would have been obvious to one skilled in the art at the time invention was made to add the aggregates of Kano, pigment of Swarup and filler i.e. extender pigment of Gagliardi in the above mentioned proportions to the composition of Weinberger et al and subject silica sol to hydrophobation to obtain a colored coating which has a finish close to natural granites, provide stability by preventing aggregation of silica particles, exhibit increased hardness and toughness.

13. Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et al (US 6, 008, 291) in view of Swarup et al (US 5, 506, 325).

The discussion with respect to Weinberger et al in paragraph 10 above is incorporated here by reference.

Weinberger et al is silent with reference to component F in granular state and hydrophobation.

Swarup et al teach colloidal silica which has been partially or totally surface modified through the silanization of hydroxyl groups on the silica particle, thereby rendering the surface hydrophobic. The hydrophobation of silica is well known in the art of coating compositions and provides stability by preventing aggregation (see footnote 1). The silica dispersed in copolymer may be added to the coating composition at any time during formulation as a rheology control additive (column 6, lines 1-16). The film forming composition comprises a resinous binder. Particularly useful resinous binders are acrylic polymers (column 6, lines 25-26). If desired, the film forming composition may contain surfactants (column 8, lines 1-3). Therefore, it would have been obvious to subject silica of Weinberger et al to hydrophobation to provide stability to coating composition by preventing aggregation and add resinous binder as a film forming resin that contains an additive such as surfactant to stabilize the dispersion of coating composition.

14. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et al (US 6, 008, 291) in view of Yamada (JP 02-275712 A).

The discussion with respect to Weinberger et al in paragraph 10 is incorporated herein by reference.

Weinberger et al is silent with respect to hydrophobation of silica sol.

However, it is fairly common in the art to subject colloidal silica to hydrophobation. For instance, Yamada teaches preparation of organophillic i.e.

hydrophobic colloidal silica sol by treating silanol groups on the surface of silica particles with hexaalkyl disilazane. This is useful for coating compositions because it provides stability to silica and prevents aggregation (abstract). Therefore, it would have been obvious to one skilled in the art at the time invention was made to subject the silica sol of Weinberger et al to hydrophobation to obtain a homogeneous coating as a result of minimized aggregation.

15. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Weinberger et al (US 6, 008, 291) in view of Kano (US 5, 891, 948) as applied to claim 2 above, and further in view of Yamada (JP 02-275712 A).

The discussion with respect to Weinberger et al in view of Kano in paragraph 11 is incorporated herein by reference.

Weinberger et al in view of Kano is silent with respect to hydrophobation of silica sol.

However, it is fairly common in the art to subject colloidal silica to hydrophobation. For instance, Yamada teaches preparation of organophillic i.e. hydrophobic colloidal silica sol by treating silanol groups on the surface of silica particles with hexaalkyl disilazane. This is useful for coating compositions because it provides stability to silica and prevents aggregation (abstract). Therefore, it would have been obvious to one skilled in the art at the time invention was made to subject the silica sol, of Weinberger et al in view of Kano,



to hydrophobation to obtain a homogeneous coating as a result of minimized aggregation.

### ***Response to Arguments***

16. Applicant's arguments with respect to rejection of claim 1 under 35 U.S.C 102(b) as being anticipated by Storow et al (US 3, 069, 375), have been considered but are moot in view of the new ground(s) of rejection.

17. Applicant's arguments filed 10/23/2007 have been fully considered but they are not persuasive. Specifically, applicant argues that Storow et al and Kano are not analogous to each other.

However, it is the examiner's position that Storow et al and Kano are analogous to each other in that, both are used as coating compositions.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karuna P. Reddy whose telephone number is (571) 272-6566. The examiner can normally be reached on Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public

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Karuna P Reddy  
Examiner  
Art Unit 1796

/KR/

/Vasu Jagannathan/  
Supervisory Patent Examiner  
Technology Center 1700